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**PROJECT II: UPDATE OF AREA SOURCE EMISSION  
INVENTORIES FOR SMALL DISTRICTS IN THE  
SACRAMENTO VALLEY AIR BASIN, MOUNTAIN  
COUNTIES AIR BASIN, AND MENDOCINO COUNTY**

**WORK PLAN  
STI-799680-1925-WP**

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**California Air Resources Board  
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## INTRODUCTION

Local air districts are responsible for estimating emissions for approximately one-third of area source categories. These emission inventories will be used as inputs to the photochemical modeling for the 2000 Central California Ozone Study (CCOS). However, many local districts can dedicate only limited resources to emission inventory development. Through this work effort (Project II), the California Air Resources Board (ARB) is offering assistance and guidance to the less populous counties of the Sacramento Valley, the Mountain Counties Air Basins, and Mendocino County (19 counties listed below).

- Amador
- Butte
- Calaveras
- Colusa
- El Dorado
- Glenn
- Mariposa
- Mendocino
- Nevada
- Placer
- Plumas
- Shasta
- Sierra
- Sutter
- Tehama
- Tuolumne
- W. Solano
- Yuba
- Yolo

## TECHNICAL APPROACH

### Task 1 – Quality Assure and Estimate Emissions for Area Sources

The goal of this task is to improve the emission inventories for area source categories that are within the local air districts' areas of responsibility (excluding on-road and off-road mobile sources). A preliminary list of these categories is given in Attachment A. STI will work with the ARB and the air districts to finalize the list of area source categories to be treated under Task 1. Task 1 will consist of the following three subtasks:

#### Task 1.1 – Review of currently existing area source inventories

For each air district, STI will QA review the existing area source emission inventories. The QA review will focus on identifying issues, such as potentially erroneous, out-of-date, substandard, or incomplete elements in a district's area source inventory. As part of the QA review, STI will identify and prioritize the significant area source emissions categories for each county. All of the area source categories included in the finalized list (discussed above) will be examined under Task 1, however, special emphasis will be placed on the significant source categories identified for each county.

#### Task 1.2 – Review and enhancement of existing emissions estimation methodologies

For each air district, STI will review existing emissions estimation methodologies including examination of activity data, temporal data, and emission factors. STI will provide for each district, a tailored Protocol Memorandum with findings and recommendations. These memoranda will discuss the findings of the QA review and will describe STI's proposed methods to improve emissions estimates. STI will provide specific guidance to improve the emission inventory for each district.

### **Task 1.3 – Update area source emission inventory for each district**

Following review and/or approval of the Protocol Memoranda by the local districts and the ARB, STI will employ the specified methods to improve or to estimate county-wide area source emissions. If necessary, STI staff members will travel to the air districts in order to gather needed activity data. Throughout Task 1, STI will provide copies of all communication with the districts to the ARB project officer. The revised county-wide area source emission inventories will be delivered to each district and to the ARB in CEIDARS format. At the end of this task, STI will provide documentation of the procedures, data sources, and resulting emissions inventories for each district.

### **Meetings**

STI staff members will plan to attend the following meetings:

Two meetings, a kickoff meeting and a progress meeting, will be held in Sacramento with ARB staff members.

Meetings will be held with staff from each of the local air districts to discuss the Protocol Memoranda, the QA review findings, and STI's proposed methods to estimate emissions for area sources. Meetings will be held for the Sacramento Valley Air Basin, the Mountain Counties Air Basin, and Mendocino County.

### **PROJECT MANAGEMENT PERSONNEL**

The key personnel for this project will be Mr. Lyle Chinkin, Ms. Dana Coe, and Ms. Tami Funk. Lyle Chinkin will serve as the Project Manager whose responsibilities will include the overall management of the project, as well as the project schedule and budget. Dana Coe and Tami Funk will be responsible for conducting and tracking day-to-day work efforts as well as the overall technical quality of work products. Technical staff members include data processing technicians who will maintain communication with the Project Manager regarding the use of resources, work progress, and especially any problems that may be encountered.

### **ESTIMATED COSTS AND SCHEDULE**

The proposed budget for this project, excluding costs for optional Task 4, is \$64,581. With Optional Task 4, the total proposed budget is \$74,339. A breakdown of these costs is included as Attachment B. A prototypical project schedule assuming a start date of February 1, 2000, is presented as Attachment C. The actual start date will be established by the ARB.

## **ATTACHMENT A**

### **PRELIMINARY LIST OF AREA SOURCE CATEGORIES TO BE TREATED DURING TASK 3**

#### **FUEL COMBUSTION**

##### **Cogeneration**

Cogeneration

##### **Oil and Gas Production**

Petroleum Production Fuel Combustion – Liquid Fuels

Petroleum Production Fuel Combustion – Gaseous Fuel

Drilling Rigs

Workover Rigs

##### **Manufacturing/Industrial**

Industrial Stationary I.C. Engines – Natural Gas

Industrial Stationary I.C. Engines – Diesel

Industrial Stationary I.C. Engines – Other Fuels

Industrial Natural Gas Combustion (Unspecified)

Industrial L.P.G. Combustion

Industrial Distillate Oil Combustion

Industrial Residual Oil Combustion

##### **Agricultural**

Orchard Heaters

##### **Services and Commerce**

Commercial Distillate Oil Combustion

Commercial Residual Oil Combustion

Commercial L.P.G. Combustion

Commercial Natural Gas Combustion – Space Heating

Commercial Natural Gas Combustion – Water Heating

Commercial Natural Gas Combustion (Unspecified)

##### **Other**

Resource Recovery

Unspecified Combustion Sources

#### **WASTE DISPOSAL**

##### **Landfills**

Landfills

##### **Other**

Volatile Organic Waste Disposal (Evaporation)

Biological Wastes (Unspecified)

#### **CLEANING AND SURFACE COATINGS**

##### **Printing**

Printing

##### **Other**

Miscellaneous Industrial Solvent Use

## **PETROLEUM PRODUCTION AND MARKETING**

### **Natural Gas Distribution**

Natural Gas Transmission Losses

### **Bulk Gasoline Storage and Transfer**

Bulk Plants/Terminals – Breathing Losses

Bulk Plants/Terminals – Working Losses

Tank Cars and Trucks – Working Losses

Bulk Gasoline Storage and Transfer (Unspecified)

## **INDUSTRIAL PROCESSES**

### **Chemical**

Synthetic Rubber Manufacturing

General Plastics Manufacturing

Fiberglass Impregnation and Fabrication

Sodium Carbonate (Soda Ash) Production

Other (Miscellaneous) Chemical Processes

### **Food and Agriculture**

Bakeries

### **Mineral Processes**

Sand and Gravel Excavation and Processing

Asphaltic Concrete Production

Grinding/Crushing of Aggregates

Surface Blasting

Cement Concrete Production

Other (Miscellaneous) Mineral Processes

### **Metal Processes**

Secondary Metal Production

### **Wood and Paper**

Wood Processing Losses

### **Other**

Industrial Process Losses (Unspecified)

Unspecified Evaporation Sources

## **SOLVENT EVAPORATION**

### **Asphalt Paving**

Cutback Asphalt

Road Oils

Hot-Mix Asphalt

Emulsified Asphalt

Asphalt Paving (Unspecified)

### **Asphalt Roofing**

Asphalt Roofing

## **MISCELLANEOUS PROCESSES**

### **Farming Operations**

Livestock Waste

### **Waste Burning and Disposal**

Agricultural Burning – Prunings

Agricultural Burning – Field Crops

Weed Abatement

Forest Management

Range Improvement

Waste Burning (Unspecified)

### **Other**

Commercial Charbroiling

Deep Fat Frying

Cooking (Unspecified)

All Other Unspecified Sources

## **NATURAL SOURCES**

### **Windblown Dust**

Windblown Dust – Desert Area

## ATTACHMENT B

### PROPOSED BUDGET FOR "PROJECT II: UPDATE OF AREA SOURCE EMISSION INVENTORIES FOR SMALL DISTRICTS IN THE SACRAMENTO VALLEY AIR BASIN, MOUNTAIN COUNTIES AIR BASIN, AND MENDOCINO COUNTY"

Cost Estimate:  
12/19/99 19:57

		TOTAL		Task 1		Task 2		Task 3				Optional Task 4	
		All Tasks		Point Source Inventories		Point Source QA / QC Review		Area Source QA / QC Review and Guidance		Meetings with ARB and Districts		Lake, Mendocino, and N. Sonoma (incl. District meetings)	
STILABOR	2000 Rates	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars	Hours	Dollars
L. Chinkin	\$168.60	82	13,825	2	337	4	674	40	6,744	36	6,070	12	2,023
D. Coe	\$91.90	106	9,741	4	368	6	551	80	7,352	16	1,470	16	1,470
T. Funk	\$64.90	478	31,022	12	779	40	2,596	378	24,532	48	3,115	72	4,673
Data Technician	\$49.00	92	4,508	0	0	20	980	60	2,940	12	588	12	588
Technical Editor	\$75.10	18	1,352	0	0	2	150	12	901	4	300	4	300
Clerical	\$56.90	32	1,821	0	0	4	228	24	1,366	4	228	6	341
SUBTOTAL - STILABOR		808	62,269	18	1,484	76	5,180	594	43,835	120	11,771	122	9,396
STIMATERIAL AND OTHER DIRECT COSTS													
Travel			1,710		0		0		1,250		460		340
SUBTOTAL - STIMATERIAL AND OTHER DIRECT COSTS			1,710		0		0		1,250		460		340
BELOW LINE COSTS (computers)			430		0		0		430		0		88
Fee on STIM & ODCs		10%	171		0		0		125		46		34
GRAND TOTAL		808	\$64,581	18	\$1,484	76	\$5,180	594	\$45,640	120	\$12,277	122	\$9,858

## ATTACHMENT C

### PROPOSED SCHEDULE FOR PROJECT II: UPDATE OF AREA SOURCE EMISSION INVENTORIES FOR SMALL DISTRICTS IN THE SACRAMENTO VALLEY AIR BASIN, MOUNTAIN COUNTIES AIR BASIN, AND MENDOCINO COUNTY

